WHAT IS CLAIMED IS:

1. A method of configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two antennas of a transmitter device, said method comprising:

assigning a respective pseudo-noise (PN) code to each of said at least two antennas;

assigning each of said plurality of sub-carriers to a respective one of said at least two antennas;

modulating each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two antennas as said each of said plurality of sub-carriers such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least two antennas;

delivering each of said plurality of modulated sub-carriers to its assigned transmitter; and

transmitting, at substantially a same time, each said plurality of modulated sub-carriers using its assigned transmitter.

2. The method of claim 1 wherein said data signal comprises an Orthogonal Frequency Division Multiplexing (OFDM) signal.

3. The method of claim 1 wherein said data signal is comprised of a plurality of frames, each of said frames being comprised of a plurality of time slots, each of said time slots including a plurality of symbols, and said method further comprises: inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a first one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned antenna.

4. The method of claim 3 further comprising: inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a further one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned antenna.

5. A method of configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two transmitter devices each having at least two antennas, said method comprising:

assigning a respective pseudo-noise (PN) code to each of said at least two antennas;

assigning each of said plurality of sub-carriers to a respective one of said at least two transmitter devices;

modulating each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two transmitter devices to which said each of said plurality of sub-carriers is assigned such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least transmitter devices; and

transmitting, at substantially a same time, each of said plurality of modulated sub-carriers using each of said at least two antennas of its assigned transmitter device.

6. The method of claim 5 wherein said signal comprises an Orthogonal Frequency Division Multiplexing (OFDM) signal.

7. The method of claim 5 wherein said data signal is comprised of a plurality of frames, each of said frames being comprised of a plurality of time slots, each of said time slots including a plurality of symbols, and said method further comprises: inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols

within a first one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned transmitter device.

8. The method of claim 7 further comprising: inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a further one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned transmitter device.

9. An apparatus for configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two antennas of a transmitter device, said apparatus comprising:

a preamble insertion circuit configured to:

assign a respective pseudo-noise (PN) code to each of said at least two antennas;

assign each of said plurality of sub-carriers to a respective one of said at least two antennas; and

modulate each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two antennas as said each of said plurality of sub-carriers such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least two antennas; and

a coding circuit configured to deliver each of said plurality of modulated sub-carriers to its assigned transmitter;

said transmitter antenna being configured to transmit, at substantially a same time, each said plurality of modulated sub-carriers using its assigned transmitter.

10. The apparatus of claim 9 wherein said data signal comprises an Orthogonal Frequency Division Multiplexing (OFDM) signal.

11. The apparatus of claim 9 wherein said data signal is comprised of a plurality of frames, each of said frames being comprised of a plurality of time slots, each of said time slots including a plurality of symbols, and wherein said coding circuit is further configured to: insert said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a first one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned antenna.

12. The method of claim 11 wherein said coding circuit is further configured to: insert said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a further one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned antenna.

13. An apparatus for configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two transmitter devices each having at least two antennas, said apparatus comprising:

a preamble insertion circuit configured to:

assign a respective pseudo-noise (PN) code to each of said at least two antennas;

assign each of said plurality of sub-carriers to a respective one of said at least two transmitter devices; and

modulate each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two transmitter devices to which said each of said plurality of sub-carriers is assigned such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least transmitter devices;

said at least two antennas of said at least two transmitter devices being configured to transmit, at substantially a same time, each of said plurality of modulated sub-carriers using each of said at least two antennas of its assigned transmitter device.

14. The apparatus of claim 13 wherein said signal comprises an Orthogonal Frequency Division Multiplexing (OFDM) signal.

15. The apparatus of claim 13 wherein said data signal is comprised of a plurality of frames, each of said frames being comprised of a plurality of time slots, each of said time slots including a plurality of symbols, and wherein said coding circuit is further configured to: insert said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a first one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned transmitter device.

16. The apparatus of claim 15 wherein said coding circuit is further configured to: insert said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a further one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned transmitter device.

17. An apparatus for configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two antennas of a transmitter device, said apparatus comprising:

means for assigning a respective pseudo-noise (PN) code to each of said at least two antennas;

means for assigning each of said plurality of sub-carriers to a respective one of said at least two antennas;

means for modulating each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two antennas

as said each of said plurality of sub-carriers such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least two antennas;

means for delivering each of said plurality of modulated sub-carriers to its assigned transmitter; and

means for transmitting, at substantially a same time, each said plurality of modulated sub-carriers using its assigned transmitter.

18. An apparatus for configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two transmitter devices each having at least two antennas, said apparatus comprising:

means for assigning a respective pseudo-noise (PN) code to each of said at least two antennas;

means for assigning each of said plurality of sub-carriers to a respective one of said at least two transmitter devices;

means for modulating each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two transmitter devices to which said each of said plurality of sub-carriers is assigned such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least transmitter devices; and

means for transmitting, at substantially a same time, each of said plurality of modulated sub-carriers using each of said at least two antennas of its assigned transmitter device.

19. A readable medium comprising:

instructions for configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two antennas of a transmitter device, said instructions comprising:

instructions for assigning a respective pseudo-noise (PN) code to each of said at least two antennas;

instructions for assigning each of said plurality of sub-carriers to a respective one of said at least two antennas;

instructions for modulating each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two antennas as said each of said plurality of sub-carriers such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least two antennas;

instructions for delivering each of said plurality of modulated sub-carriers to its assigned transmitter; and

instructions for transmitting, at substantially a same time, each said plurality of modulated sub-carriers using its assigned transmitter.

20. The medium of claim 19 wherein said data signal comprises an Orthogonal Frequency Division Multiplexing (OFDM) signal.

21. The medium of claim 19 wherein said data signal is comprised of a plurality of frames, each of said frames being comprised of a plurality of time slots, each of said time slots including a plurality of symbols, and further comprising: instructions for inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a first one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned antenna.

22. The medium of claim 21 further comprising: instructions for inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a further one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned antenna.

23. A readable medium comprising:

instructions for configuring a preamble portion of a data signal for transmission over a plurality of sub-carriers by at least two transmitter devices each having at least two antennas, said instructions for comprising:

instructions for assigning a respective pseudo-noise (PN) code to each of said at least two antennas;

instructions for assigning each of said plurality of sub-carriers to a respective one of said at least two transmitter devices;

instructions for modulating each of said plurality of sub-carriers as a function of said respective pseudo-noise (PN) code that is assigned to a same one of said at least two transmitter devices to which said each of said plurality of sub-carriers is assigned such that a plurality of modulated sub-carriers are obtained that are each assigned to a respective one of said at least transmitter devices; and

instructions for transmitting, at substantially a same time, each of said plurality of modulated sub-carriers using each of said at least two antennas of its assigned transmitter device.

24. The medium of claim 23 wherein said signal comprises an Orthogonal Frequency Division Multiplexing (OFDM) signal.

25. The medium of claim 23 wherein said data signal is comprised of a plurality of frames, each of said frames being comprised of a plurality of time slots, each of said time

slots including a plurality of symbols, and further comprising: instructions for inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a first one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned transmitter device.

26. The medium of claim 25 further comprising: instructions for inserting said each of said plurality of modulated sub-carriers into at least a first two of said plurality of symbols within a further one of said plurality of time slots prior to delivering said plurality of modulated sub-carriers to its assigned transmitter device.